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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,289	04/07/2000	YAACOV ALMOG	UDS	5383

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EXAMINER

XU, LING X

ART UNIT

PAPER NUMBER

1775

24

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-24

Office Action Summary

Application No.

09/529,289

Applicant(s)

ALMOG ET AL.

Examiner

Ling X. Xu

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1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-12, 14-20, 22-30, 32, 37-42 and 45 is/are pending in the application.
- 4a) Of the above claim(s) 30, 37-41 and 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-12, 14-20, 22-29, 32 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicants' amendments filed on 1/8/2003 have been entered. Claim 21 has been cancelled. In light of applicants' amendments, previous rejections based on 35 USC 112(2) are now withdrawn. However, the rejections based on 35 USC 102(b) and 103(a) still stand. The amendments also necessitate some new grounds of rejection presented in this Office action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 7-12, 14-20, 22-29, 32, and 42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 22, and 42 have been amended from "a silane coupling agent" to -- the reaction products of amino propyl triethoxy silane--. However, the specification does not describe "the reaction products of amino propyl triethoxy silane" or any reactions involve amino propyl triethoxy silane as reactant or product. The specification only

describes the use of "silane coupling agent" or "amino propyl triethoxy silane" in the coating.

Accordingly, the subject matter "the reaction products of amino propyl triethoxy silane" was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Claims 1-3, 7-12, 14-20, 22-29, 32, and 42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1, 22, and 42 have been amended from "a silane coupling agent" to --the reaction products of amino propyl triethoxy silane--. However, the specification does not describe "the reaction products of amino propyl triethoxy silane" or any reactions involve amino propyl triethoxy silane as reactant or product. The specification only describes the use of "silane coupling agent" or "amino propyl triethoxy silane" in the coating. It is unclear how to obtain the reaction products of amino propyl triethoxy silane from the disclosure in the specification.

Accordingly, the specification does not enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use "the reaction products of amino propyl triethoxy silane".

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-12, 14-20, 22-29, 32, and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 22 and 42, it is unclear what the reaction products of amino propyl triethoxy silane are since no reaction conditions are specified, such as what types of reactants involved and under what conditions (temperature, pressure, catalyst, etc.) in the specification. It is also unclear if the claimed reaction products are referred to the major products or minor products or intermediate products of the reaction.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 7-12, 19-20, 28-29, 32 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Lever et al.(EP-0458481).

Lever discloses a substrate suitable for printing a toner image thereon comprises a sheet of plastic (page 2, lines 23-58), such as polypropylene (BOPP), polyethylene, polyvinylchloride, PET, and polycarbonate. These plastics are preferably biaxially oriented (page 2, line 48).

Lever also discloses a underlayer coating, the lacquer layer, comprises a polymer material which has crosslinkable functional groups, such as amine and

trihydroxy silyl groups (page 3, lines 2-9), and an overlayer coating, the toner image receptive layer, comprises a polymer material to which a toner image can be fused and fixed (page 4, line 42-page 5, line 38). Examples of such materials are acrylic acid copolymers, vinyl pyridine copolymer, styrene butadiene copolymer.

The polymer material having crosslinkable functional groups including amine, amide, and trihydroxy silyl groups (page 3, lines 2-9) can be one of the reaction products of the amino propyl triethoxy silane.

Lever further discloses that the overlayer is less than 2.5um (page 6, lines 5-15), which is within the range recited in claim 42.

Accordingly, Lever meets all the limitations of claims 1,3, 7-12, 19-20, 28-29, 32 and 42.

Claim Rejections - 35 USC § 103

6. Claims 2-3 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lever et al.

As stated above, Lever discloses a substrate suitable for printing a toner image thereon comprises a sheet of plastic, an underlayer coating and an overlayer coating as recited in claims 1 and 42.

Lever does not disclose the overlayer has to be free of particulate, wax or pigment, or the underlayer has to be free of particulate matter.

However, particulate matter, wax and pigment are well known optional additives for the image receiving substrates. Addition of these additives depends on the

application of the substrates. As indicated in *Lever*, page 3, line 10, the lacquer layer (underlayer) preferably additionally comprises finely particulate materials when the disclosed substrate is used as a drafting materials (depends on the application of the substrate).

Therefore, absence of evidence that the claimed overlayer or underlayer being free of particulate matter (or wax, pigment) is critical, it would have been obvious to one of ordinary skill in the art to decide whether use or not use the optional additives, such as particulate matter, wax or pigment, when it is applicable.

7. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Level et al.*

As stated above, *Lever* discloses a substrate suitable for printing a toner image thereon comprises a sheet of plastic, an underlayer coating and an overlayer coating as recited in claims 1 and 42.

Lever does not specifies that the overlayer comprises ethylene acrylic acid copolymer, however, *Lever* discloses that the overlayer comprises acrylic acid copolymer (page 5, lines 1-35). Ethylene acrylic acid copolymer and acrylic acid copolymer have similar structure and have same or similar properties and utilities.

Therefore it would have been obvious to one of ordinary skill in the art to use the ethylene acrylic acid copolymer as one of acrylic acid copolymer derivative in *Lever*'s overlayer with the expectation that compound similar in structure would have similar properties and utilities.

With respect to the acrylic acid comonomer percentage weight recites that the styrene copolymer/acrylic polymer ratio is 0.1 to 10:1.0 (about 9%-90% of acrylic acid comonomer in the copolymer), which is within the claimed range recited in claims 15-18.

8. Claims 1, 22 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lever et al.

As stated above, Lever discloses a substrate suitable for printing a toner image thereon comprises a sheet of plastic, an underlayer coating and an overlayer coating as recited in claims 1 and 42.

Lever does not disclose the silane couple agent is the amino propyl triethoxy silane. However, Lever discloses the underlayer coating, the lacquer layer, comprises a polymer material which has crosslinkable functional groups of amine and trihydroxy silyl groups. Trihydroxy silyl group is silane couple agent. Polymer material with amine and trihydroxy silyl groups has similar structure as the claimed polymer with amino propyl triethoxy silane and these polymers have same or similar properties and utilities.

Therefore it would have been obvious to one of ordinary skill in the art to use claimed polymer with amino propyl triethoxy silane in Lever's underlayer with the expectation that compounds similar in structure would have similar properties and utilities.

9. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lever et al.

As stated above, Lever discloses a substrate suitable for printing a toner image thereon comprises a sheet of plastic, an underlayer coating and an overlayer coating as recited in claims 1 and 42.

Level does not specify that the weight per square meter of the underlayer and overlayer.

However, Level discloses that same and/or similar materials used in the underlayer and overlayer. ~~Level~~^{Lever} also discloses the thickness of underlayer is at least 2 um and the thickness of overlayer is less than 2.5um, which are within the ranges as claimed.

The cited document discloses a composition prepared from the same components as claimed in the present application except for the particular amounts and parameters. The claimed parameters are expressed differently and thus may be distinct from disclosed, it is incumbent upon applicants to establish that such difference is unobvious. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to employ the particular amounts and/or parameters as claimed, since it is well-established that merely selecting proportions and ranges is not patentable absent a showing of criticality. In re Becket, 33 USPQ 33, and In re Russell, 169 USPQ 426.

Response to Arguments

10. Applicant's arguments filed 1/8/2003 have been fully considered but they are not persuasive.

Applicants argue that the amended claims recite that the coating may comprise reaction products of amino propyl triethoxy silane and point out that "the material used, namely the amino propyl triethoxy silane, forms as a first reaction product, the hydroxy material and other subsequent reaction products".

However, as stated above, it is unclear what the reaction products of amino propyl triethoxy silane are since no reaction conditions are specified, such as what types of reactants involved and under what conditions (temperature, pressure, catalyst, etc.) in the specification. It is also unclear if the claimed reaction products are referred to the major products or minor products or intermediate products of the reaction.

As stated above, ~~Lever~~ teaches the underlayer coating comprises polymer material which has crosslinkable functional groups, such as amine, amide and trihydroxy silyl groups. This type of polymer could also be one of the reaction products of amino propyl triethoxy silane. Accordingly, ~~Lever~~ still meets the limitations of the amended claims.

Applicants also argue that the Examiner use of a portion of the claimed compound with other backbones makes the presently claimed compounds obvious and state that the materials that are claimed and described are the results of substantial experimentation and the coatings must meet a number of requirements such as toner transfer and quality, as well as good adhesion.

The Examiner had made four separate rejections under 35 USC 103(a) previously, it is unclear which rejection the applicants are referred to. In response to the

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applicants' argument in general, because *Lever* teaches the same and similar materials as stated above and in the prior Office action, the same or similar materials will also meet the same requirements such as toner transfer and quality as claimed. Therefore, *Lever* teaches the claimed invention.

Applicants further argue that the "Examiner has proffered no prima facie evidence that any trihydroxy silane and any amine terminated material will act equally well". It is unclear how many types of trihydroxy silane or amine terminated material the applicants are referred to. The claims do not recite any specific amine terminate polyamide, amino propyl triethoxy silane or the reaction products of amino propyl triethoxy silane. Therefore, the arguments are not commensurate in scope with the claims because the claims do not require the argued limitations of any claimed specific amine terminate polyamide, amino propyl triethoxy silane or the reaction products of amino propyl triethoxy silane.

Applicants further cite case law *In re O'Farrell* and argue that "the prior art could provide only 'obvious to try' for the presently claimed material, which are just two materials among very many materials that one might try". The Examiner disagrees. *Leve* specifically teaches, as stated above and in the prior Office action, that the underlayer coating comprises polymer material which has crosslinkable functional groups, such as amine, amide and trihydroxy silyl groups, which are the same materials and/or similar materials as claimed. *Leve* does not teach many materials that one might try as indicated by the applicants. Therefore, *Leve* teaches the claimed invention.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

lx

lx

February 7, 2003

Deborah Jones
DEBORAH JONES
SUPERVISORY PATENT EXAMINER